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Bruhat Bengaluru Mahanagara Palike

(2)

DETAILED PROJECT REPORT

CONSULTING SERVICES FOR PREPARATION OF DETAILED PROJECT REPORT FOR

Name of Work: Development of Park at Sandeep Unnikrishnan road from Purvankara Apartment to GKVK road in Attur ward no. 04

COST OF THE PROJECT: 300.00 LAKHS

Submitted To:
The Executive Engineer,
Yelahanka Project Division,
B.B.M.P, Bangalore.

SILICON CONSULTING ENGINEERS

CONTENTS

Chapter No.	Description
1	Introduction
2	Investigation & Surveys
3	Project Cost Estimates

Annexure

Annexure A. 1.1 Key Map

Annexure A.4.1 Detailed Cost Estimate, Rate Analysis, Draft Tender Schedule

Chapter -1
INTRODUCTION

Chapter -1
INTRODUCTION

1.1.1 General

Bengaluru is the capital of India's southern Karnataka state. The center of India's high-tech industry, the city is also known for its parks. It is also known as the Garden City because of its many beautiful gardens and parks. By Cubbon Park, Vidhana Soudha is a Neo-Dravidian legislative building. Former royal residences include 19th-century Bangalore Palace, modeled after England's Windsor Castle, and Tipu Sultan's Summer Palace, an 18th-century teak structure.During the last couple of decades, city has witnessed drastic increase in population, change in land use pattern of the city, life style of the people and their commuting habits and the revolutionary changes that has taken place in the automobile industry. This has contributed to the growth of vehicular traffic in an enormous way.

1.1.2 City Background

It also called the Silicon Valley of India , because of the high concentration of IT industry. Bangalore is rated to one of the fastest growing cities in Asia with a current population of more than 10 million. During the last couple of decades, city has witnessed drastic increase in population, change in land use pattern of the city, life style of the people and their commuting habits and the revolutionary changes that has taken place in the automobile industry.

1.1.3 Population

The Bangalore city population is currently more than 11 million and increasing in a forward march. The lifestyle of the citizens is changing day to day due to globalization and introducing of new brands in all sector. Bangalore, the fastest growing city of India, comprises of a dynamic blend of people, belonging to various religions, castes and communities. With the introduction of information technology in the city, it has assumed an international character. IT professionals not only from the various parts of India, but also that of the world, are migrating to the city. This has led to Bangalore becoming more like the melting pot of various cultures. Read on to know more about the people and lifestyle of Bengalooru, India.

1.1.4 Traffic growth

What adds to the traffic pressure in Bengaluru in particular is that there is very little scope for expansion of roads and the need to use existing roads for smooth movement of vehicles is

even more pronounced. It thus becomes mandatory for the administration to ensure better parking facilities. So far, the government and the BBMP have not taken this issue seriously and now the situation is such that it needs to be addressed seriously and effectively. Rapid population growth because of IT and other associated industries in Bengaluru led to an increase in the vehicular population to about 1.5 million, with an annual growth rate of 7-10%. With the increase in population and the expansion of the city, the problem of connectivity of the populace has arisen. Quite obviously personalized modes of transport have grown at a tremendous rate and two wheelers along with the cars almost comprise 90% of the total registered vehicular population in the city. Two wheelers constitute more than 70% of the total volume, while cars comprise 15%, autos 4% and the remaining 8% includes other vehicles such as buses, vans and tempos.

Project Location

The Project includes **Development of Park at Sandeep Unnikrishnan road from Purvankara Apartment to GKVK road in Attur ward no. 04**. The Project area is in Yelahanka Assembly constituency, Bangalore.

Key Map of the roads proposed is enclosed in **Annexure A.1.1.**

M/s. SILICON CONSULTING ENGINEERS is entrusted by BBMP to carry out the work of Preparation of Detailed Estimate and Report for the above said work.

Accordingly we **M/s. SILICON CONSULTING ENGINEERS** have commenced the consultancy works as per the scope of services described in the RFP document.

1.2 Scope of Work

The Scope of Services of the Consultancy includes the following:

Inventory and condition surveys for existing road & pavement, cross drainage structures and bridges.

- Engineering surveys and investigations
- Design of lateral side drains and Cross drainage works such as culverts etc
- Rate analysis of scheduled items, BOQ and Cost estimates.
- Final Detailed Project Report and final drawings
- Photos of the project roads or site

.3 Contents of the Report

The Methodology, as detailed in the Project proposal, it has been followed for carrying out the necessary Investigations and for the Preparation of Detailed Estimate and Report.

This Report includes the following.

- Chapter 2: Investigation & Surveys
- Chapter 3: Project Cost Estimates

Chapter -2
INVESTIGATION & SURVEYS

Chapter -2
ENGINEERING SURVEYS AND INVESTIGATIONS

2.1 General

Various surveys and investigations that are the essential inputs for detailed engineering design are detailed in this chapter. All the relevant maps / data / details available with the concerned departments have been collected, compiled and reviewed. Particular attention has been given to past / historical data / reports. A review of the past data available in the various studies has been listed out and such available data has been made use of, after updating / augmenting the data wherever necessary. The data as collected has been made use of in analysis, design, formulation of improvement proposals and costing. The activities have been performed on several fronts fully complying with the requirements. The activities that are carried out are brought out hereunder.

The various engineering surveys / investigations of the road sections include:

- Reconnaissance Survey.
- Visual Topographical Survey.
- Visual Condition Survey.
- Soil, geo-technical, material, hydrology and drainage surveys

2.2 Reconnaissance Survey

Reconnaissance Survey of the road, considered for improvements, has been carried out to identify the general condition of roads, drains, culverts and bridges for further surveys / investigations, to understand kind of establishments along the stretches of roads and to work out land acquisition scheme. Making use of the observations / data collected during reconnaissance survey, detailed schedule for surveys / investigations required for the project has been finalized.

2.3 Visual Topographical Survey

Topographic Survey has been conducted all along the corridor by physically measuring the Road Width, Footpath Width, Drain Width, Alignment of Road and with the aid of Google Maps.

2.4 Visual Condition Survey

Visual Condition Survey of the road sections has been carried out by travelling along the patching, rutting, pot holes, edge breaking, etc. by visual observations in a well structured data format. The data so collected has been compiled and presented (kilometer wise) in the form of tables for easy understanding. This data has been used to assess the pavement condition.

Chapter - 3
PROJECT COST ESTIMATES

3.1 Detailed Cost Estimate

Detailed cost Estimate has been worked out based on detailed engineering design

3.2 General

Cost Estimate is an important part of the Report as it provides vital input to financial evaluation of the project. The cost estimates have been prepared for Strengthening of the existing road including strengthening of longitudinal drains, road furniture, site clearance and Dismantling.

3.3 Basic rates

As part of Report, Rate Analysis of each of the item has been prepared by adopting PW, P & IWTD SR 2021 - 22, Bangalore Circle. The rates as given in PW, P & IWTD SR are to be enhanced by 10% for additional weightages for the works to be executed under extra ordinary conditions for Bangalore Metropolitan Limits.

3.4 Project Management and Quality Control

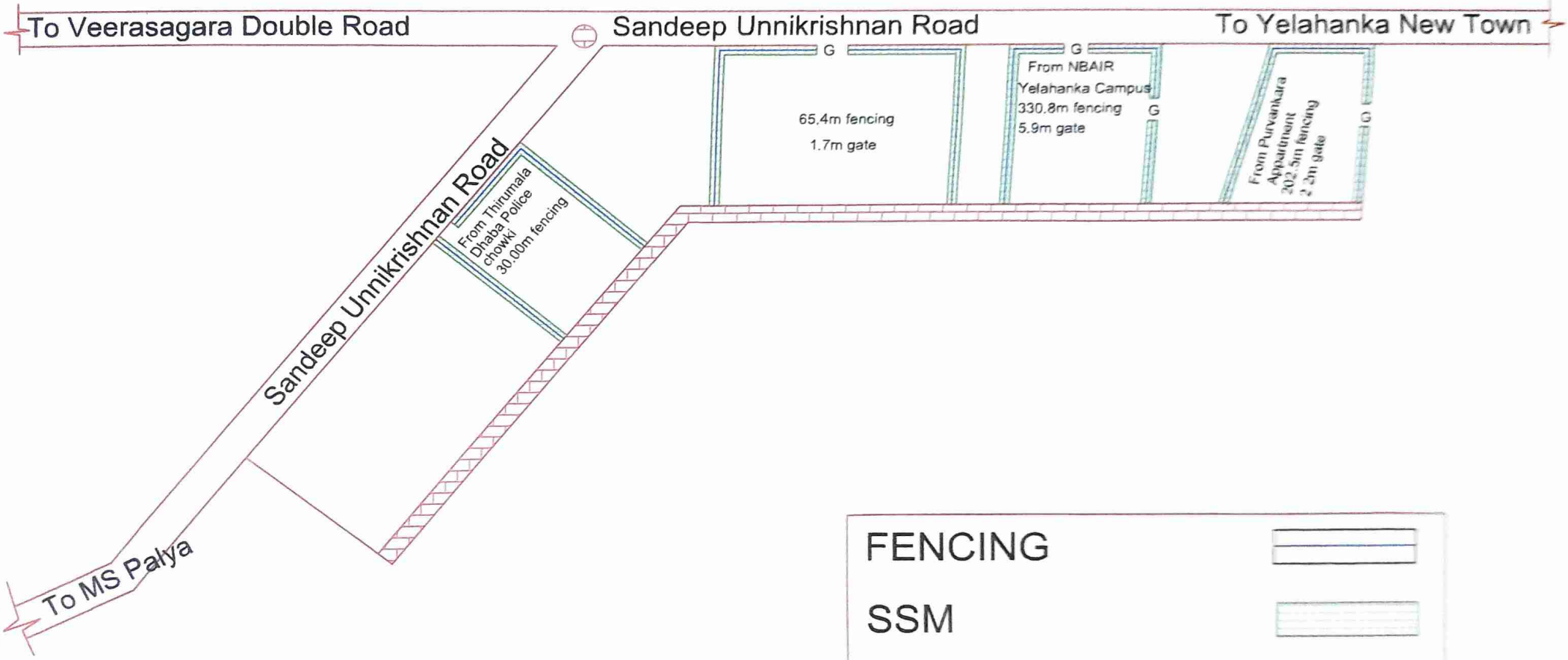
Provision of around 2.0% of Construction Cost has been made towards Cost of DPR Preparation, Quality Control, PMC and Proof Checking.

3.5 Project Cost

The total project cost for the proposed work is 300.00 Lakh.

Detailed Cost Estimate is enclosed in **Annexure A. 4.1**

Annexure A. 1.1
KEY MAP



BRUHAT BANGALORE MAHANAGARA PALIKE	CONSULTANT:- Silicon Consulting Engineers #S1317, 4th CROSS BEL 2nd STAGE BHARATH NAGAR BANGALORE 560 091. E-mail siliconcivilengineers@gmail.com		Asst. Executive Engineer Project Division Yelahanka Zone	Development of Park at Sandeep Unnikrishnan road from Purvankara Apartment to GKVK road in Attur ward no. 04

Annexure A. 4.1
DETAILED COST ESTIMATE
RATE ANALYSIS

Bruhat Bangalore Mahanagara Palike
Excecutive Engineer Yelahanka Project Division

Name of Work: Development of Park at Sandeep Unnikrishnan road from Purvankara Apartment to GKVK road in Attur ward no. 04

Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
Demolishing stone rubble masonry manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material to the appropriate disposal area as per direction of Engineerin- charge In cement mortar.(V-II.No 19.9.2,Page No-163 of PWD SR 2021-22)								
Sandeep Unnikrishnan Road Towards MS Palya LHS								
Below Ground level								
Old SSM foundation								
From Purvankara Appartment (202.5m fencing + 2.2m gate)	1	204.70	0.45	0.20	18.42			
From NBAIR Yelahanka Campus (330.8m fencing + 5.9m gate)	1	336.70	0.45	0.20	30.30			
(65.4m fencing + 1.7m gate)	1	67.10	0.45	0.20	6.04			
From Thirumala Dhaba Police chowki (141m fencing + 6.7m gate)	1	30.00	0.45	0.20	2.70			
Above Ground level								
Old SSM foundation								
From Purvankara Appartment (202.5m fencing + 2.2m gate)	1	204.70	0.30	0.40	24.56			
From NBAIR Yelahanka Campus (330.8m fencing + 5.9m gate)	1	336.70	0.30	0.40	40.40			
(65.4m fencing + 1.7m gate)	1	67.10	0.30	0.40	8.05			
From Thirumala Dhaba Police chowki (30m fencing)	1	30.00	0.30	0.40	3.60			
					134.09			
			Use 40% Qty		53.63			
					134.09	**Cum**	**1419.00**	**190266.62**
Basic Rate Rs.=	1290.00							
Add 10% A.W Rs. =	129.00							
Total Rate Rs. =	**1419.00**							

Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
Earth work excavation by **manual means for drains,canals,** waste weir, draft, approach channels, key trenches, foundation of bridges and such simillar works in all kinds of soils , as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter, excavated surface leveled and sides neatly dressed disposing off the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools & other appurtenaces required to complete the work.(V-I.No 1.4,Page No-5 of PWD SR 2021-22)								
Sandeep Unnikrishnan Road Towards MS Palya LHS								
For SSM foundation								
From Purvankara Appartment (202.5m fencing + 2.2m gate)	1	204.70	0.75	0.70	107.47			
From NBAIR Yelahanka Campus (330.8m fencing + 5.9m gate)	1	336.70	0.75	0.70	176.77			
(65.4m fencing + 1.7m gate)	1	67.10	0.75	0.70	35.23			
From Thirumala Dhaba Police chowki (30m fencing)	1	30.00	0.75	0.70	15.75			
Deduct existing SSM QTY								
Walking track	1	550.00	2.20	0.30	-68.06			
					363.00			
Basic Rate Rs.=	186.00				**630.15**	**Cum**	**204.60**	**128929.20**
Add 10% A.W Rs. =	18.60							
Total Rate Rs. =	**204.60**							
Providing and laying in position **plain cement concrete** for levelling course for all works in foundation. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork shall be paid separately)**Mix 1:3:6** (M10) Using 40 mm nominal size graded crushed coarse aggregates (V-1, P.No-15, I No-2.1.3 of PWD SR 2021-22)								
Sandeep Unnikrishnan Road Towards MS Palya LHS								
For SSM foundation								
From Purvankara Appartment (202.5m fencing + 2.2m gate)	1	204.70	0.75	0.15	23.03			
From NBAIR Yelahanka Campus (330.8m fencing + 5.9m gate)	1	336.70	0.75	0.15	37.88			
(65.4m fencing + 1.7m gate)	1	67.10	0.75	0.15	7.55			

Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
From Thirumala Dhaba Police chowki (30m fencing)	1	30.00	0.75	0.15	3.38			
Walking track	1	550.00	2.00	0.15	165.00			
					236.83	Cum	6109.40	1446896.84
Basic Rate Rs.=	5554.00							
Add 10% A.W Rs. =	555.40							
Total Rate Rs. =	6109.40							
Providing **Size Stone masonry** with hard stone in foundation & plinth with Cement mortar 1:6 (1 cement : 6 coarse sand) (V-II, No-5.4, P.No-9 of PWD SR 2021-22)								
Sandeep Unnikrishnan Road Towards MS Palya LHS								
For SSM foundation								
From Purvankara Appartment (202.5m fencing + 2.2m gate)	1	204.70	0.60	0.40	49.13			
From NBAIR Yelahanka Campus (330.8m fencing + 5.9m gate)	1	336.70	0.60	0.40	80.81			
(65.4m fencing + 1.7m gate)	1	67.10	0.60	0.40	16.10			
From Thirumala Dhaba Police chowki (30m fencing)	1	30.00	0.60	0.40	7.20			
Sandeep Unnikrishnan Road Towards MS Palya LHS								
For SSM foundation								
From Purvankara Appartment (202.5m fencing)	1	202.50	0.45	0.60	54.68			
From NBAIR Yelahanka Campus (330.8m fencing)	1	330.80	0.45	0.60	89.32			
(65.4m fencing)	1	65.40	0.45	0.60	17.66			
From Thirumala Dhaba Police chowki (30m fencing)	1	30.00	0.45	0.60	8.10			
	Deduct Available stone Qty				-53.63			
					269.36	Cum	5887.20	1585746.76
Basic Rate Rs.=	5352.00							
Add 10% A.W Rs. =	535.20							
Total Rate Rs. =	5887.20							
Providing **Size Stone masonry** with hard stone in foundation & plinth with Cement mortar 1:6 (1 cement : 6 coarse sand) (V-II, No-5.4, P.No-9 of PWD SR 2021-22) Using Available stone								
Sandeep Unnikrishnan Road Towards MS Palya LHS								

Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
	Available stone Qty				53.63			
					53.63	Cum	4581.50	245724.17
Basic Rate Rs.=	5352.00							
Size stone rate Rs. 12.50Deduct 5% GST = Rs. 11.87	1187.00							
Net	4165.00							
Add 10% A.W Rs. =	416.50							
Total Rate Rs. =	**4581.50**							
Providing and laying in position Reinforced **cement concrete** for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necesary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork to be paid separately) **Mix 1:2:4 (M15)** Using 20 mm nominal size graded crushed coarse aggregates (V-I, No-2.4.1, P.No-17 of PWD SR 2021-22).								
Sandeep Unnikrishnan Road Towards MS Palya LHS								
For SSM foundation								
From Purvankara Appartment (202.5m fencing + 2.2m gate)	1	204.70	0.45	0.075	6.91			
From NBAIR Yelahanka Campus (330.8m fencing + 5.9m gate)	1	336.70	0.45	0.075	11.36			
(65.4m fencing + 1.7m gate)	1	67.10	0.45	0.075	2.26			
From Thirumala Dhaba Police chowki (30m fencing)	1	30.00	0.45	0.075	1.01			
					21.55	Cum	6468.00	139381.36
Basic Rate Rs.=	5880.00							
Add 10% A.W Rs. =	588.00							
Total Rate Rs. =	**6468.00**							

Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
Fabricating, providing and erecting in position of MS Hot Dip Galvanised Sq. Hallow Poles of 132 X 132 Heavy gauge of length 3000mm with MS. Hot dip Galvanised grill work as per approved design and drawing of chief architect. Using 12 X 75mm galvanised flat for alround frame and 20 X 20mm galvanised forged design with square for vertical at 150mm c/c as shown in the drawing including providing forged ornamental arrowhead at top and bottom. The work is inclusive of throughing flat, square rods, placing welding all the joints, including grinding, finishing 2 coats of anticorrosive paint over one coat of metal primer. The rate is inclusive of all materials like MS. Hollow galvanized pipe, flats, forged square rods, cost of labour for all items of work cost painting, welding, cutting, grinding with all lead and lift as per specification including loading and unloading with cost and conveyance of all materials, labour, machinery andincidental charges for the successful completion of the work as per the direction of the Engineer-in-charge of the work. (Data Rate)								
Sandeep Unnikrishnan Road Towards MS Palya LHS								
For SSM foundation								
From Purvankara Appartment (202.5m fencing)	1	202.50		1.80	364.50			
From NBAIR Yelahanka Campus (330.8m fencing)	1	330.80		1.80	595.44			
(65.4m fencing)	1	65.40		1.80	117.72			
From Thirumala Dhaba Police chowki (30m fencing)	1	30.00		1.80	54.00			
					1131.66	**Sqm**	**15630.00**	**17687845.80**
Data Rate	**15630.00**							
Fabricating, providing and erecting in position Hot dip galvanised Gate. Using 72 X 72 X 4.8mm Sq. GI Pipe Frame with Top pipe bending in heavy duty hydraulic press with sand packing and hot bending to form double arch as per drawing profile, 20mm hot dip galvanised sq. rod for verticals at 150mm c/c, as shown in the drawing including providing hot dip galvanised forged ornamental design in between sq. rods and heads at top, middle and bottom. Intermediate supports of 75X12 mm and 50X6 mm arch bend to hot dip galvanised flats. The work is inclusive of throughing GI flat GI sq. rods, placing, welding all the joints including grinding, finishing metal putty, painting two coats enamel painting. The rate is inclusive of all materials like GI sq. pipe, GI sq. rods, GI forged designs etc., heavy duty hinges are made out of 75mm solid sq. block assembled with 20mm dia bearing in three places for each flop. Heavy Duty Locking arrangements at tow places including cost of labour, painting, erecting charges using hoist pulley cranes with all lead and lift, loading, transportation, unloading, scaffolding charges and all other incidental charges for successful completion of the work as per directions of the Engineer-in-charge of the work. (Data Rate)								
Sandeep Unnikrishnan Road Towards MS Palya LHS								
For SSM foundation								
From Purvankara Appartment (2.2m gate)	1	2.20		2.40	5.28			

	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
	From NBAIR Yelahanka Campus (5.9m gate)	1	5.90		2.40	14.16			
	(1.7m gate)	1	1.70		2.40	4.08			
	From Thirumala Dhaba Police chowki (3.2m gate)	1	3.20		2.40	7.68			
	(3.5m gate)	1	3.50		2.40	8.40			
	Data Rate	**21350.00**				**39.60**	**Sqm**	**21350.00**	**845460.00**
	Providing and laying **heavy duty cobble stones 60mm thick interlock pavers**, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per m2 over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level , including cost of materials, labour and Usage charges of machinery complete as per specifications. (V-2, P.No-64, I No-9.31 of PWD SR 2021-22)								
	Sandeep Unnikrishnan Road Towards MS Palya LHS								
	Walking track	1	550.00	2.00		1100.00			
						1100.00	**Sqm**	**1192.40**	**1311640.00**
	Basic Rate Rs.=	1084.00							
	Add 10% A.W Rs. =	108.40							
	Total Rate Rs. =	**1192.40**							
10	**Providing and fixing pre cast solid cement concrete kerb stones** made out of M20 with top and bottom width 114 and 165 mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting including formwork, curing, including cost of materials, labour charges of machinery, loading and unloading, lead and lift, transportation ete.,complete as directed by the Engineer in Charge of the work (Approved Rate)								
	Sandeep Unnikrishnan Road Towards MS Palya LHS								
	Walking track	2	550.00			1100.00			
						1100.00			
						2200.00	**Nos**	**507.00**	**1115400.00**
	Approved Rate Rs.=	507.00							
11	**Painting two coats after filling the surface with synthetic enamel paint** in all shades on new plastered concrete surfaces (V-III, P.No.56, I.No.8.10 of PW, PWD SR 2021-22)								
	Sandeep Unnikrishnan Road Towards MS Palya LHS								
	Walking track	2	550.00		0.30	330.00			
						330.00	**Sqm**	**93.50**	**30855.00**
	Basic Rate Rs.=	85.00							
	Add 10% A.W Rs. =	8.50							
	Total Rate Rs. =	**93.50**							
12	**Loading and Unloading of Stone Boulder**/Stone aggregates/ Sand/Kankar/Moorum. (Tipper 5.5 m3) (V-III Page No.3, Item No.1.1 A of PWD SR 2021-22)								

Sl No	Description of Items	No	Length	Width	Depth	Quantity	Unit	Rate	Amount
	Basic rate	118.00							
	Area Weightage 10%	11.80							
	Total	**129.80**							
	Qty frm Item No-1		80.45			80.45			
	Qty frm Item No-2		630.15			630.15			
						710.60	**Cum**	**129.80**	**92,236.33**
3	**Cost of Haulage** Excluding Loading and Unloading Taking output 10 t load and lead 10 km = 100 t.km (V-III Page No.3, Item No.1.4A of PWD SR 2021-22) Lead 8 Km								
	Basic rate	12.00							
	8Km Lead 12*8	96.00							
	Area Weightage 10%	9.60							
	Total	**105.60**							
	Qty frm Item No-1		80.45	2.01		161.71			
	Qty frm Item No-2		630.15	1.28		806.60			
						968.30	**t.Km**	**105.60**	**102252.66**
								Total Construction Cost	**24922634.73**
								18% GST Charges	**4486074.25**
								DPR & PMC Charges	**591000.00**
								Sub Total	**29999708.98**
								Utility Shifting, Miscellaneous, Rounding off	**291.02**
								GRAND TOTAL	**30000000.00**

Certificate

1. The workspot was inspected and works is found to be necessary.
2. The area comes within the Bruhat Bangalore Mahanagara Palike limits.
3. The rates adopted based on the PWD SR,Bangalore circle for year 2021-2022, issue rates and Data Rates.

Assistant Engineer
Yelahanka Project Division
BBMP Bangalore

Asst.Executive Engineer
Yelahanka Project Division
BBMP Bangalore

Executive Engineer,
Yelahanka Project Division
BBMP Bangalore

Technical Sanction
Accorded For ..Rs. 300.00 Lakhs only
Head of A/C..P2178.....
CER NO :.....175..... Dt:..28/10/2022

25.300.00 Lakhs
P 2178 18/10/2023

CACLULATION OF MATERIALS FOR GRILL AT B.B.M.P PARKS

Fabricating, providing and erecting in position of MS. Hot dip galvanized Sq. Hallow Poles of 132*132 Heavy gauge of length 3000mm with MS. Hot dip galvanized grill work as per approved design and drawing of chief architect. Using 12*6mm galvanized flat for alround frame and 20mm*20mm galvanized forged design with square for vertical at 150mm C/C as shown in the drawing including providing forged ornamental arrowhead at top and bottom. The work is inclusive of throughing flat, square rods, placing welding all the joints, including grinding, finishing 2 coats of Emulsive paint over one coat of metal primer. The rate is inclusive of all materials like MS. Hollow galvanized pipe, flat, forged square rods, cost of labour for all items of work cost painting, welding, cutting, grinding with all lead and lift as per specification including loading with cost and conveyance of all materials, labour, machinery and incidental charges for the successful complete of the work as per the direction Engineer-in-charge of the work.

Area Considered.6.23Mtr*2.10Mtr.=13.08Sqmt

1. 20mm*&20mm Sq.Rod/3.14Kg/Rmt:

2.05 Mtr.*37 Nos = 75.85 Rmt.
0.33 Mtr.*40 Nos.= 13.20 Rmt.
0.20 Mtr.* 2 Nos.= 0.40 Rmt.
89.45 Rmt
Wastage-5% 4.47 Rmt
93.92 Rmt @ 3.14 Kg/Rmt.=294.92 Kgs.

2. 75*12mm Flat/7.10Kg/Rmt:

5.70 Mtr.* 2 Nos.= 11.40 Rmt.
1.67 Mtr.*2 Nos.= 3.34 Rmt.
0.10 Mtr.*8 Nos.= 0.80 Rmt.
0.20 Mtr.*6 Nos.= 1.20 Rmt.
16.74 Rmt
Wastage-5% 0.84 Rmt
17.58 Rmt @ 7.10 Kg/Rmt.=124.80 Kgs.

3. 12mm*6mm Flat:

0.19*2*20 = 7.60 Rmt.
Wastage-5% 0.38 Rmt
7.98 Rmt @ 0.56 Kg/Rmt.=4.47 Kgs.

4. 65*65*6mm 'L'angle/5.80Kg/Rmt:

0.80 Mtr.* 4 Nos.= 3.20 Rmt.
0.60 Mtr.* 4 Nos.= 2.40 Rmt.
0.36 Mtr.* 2 Nos.= 0.72 Rmt.
6.32 Rmt
Wastage-5% 0.32 Rmt
6.64 Rmt @ 5.80 Kg/Rmt.=38.49 Kgs.

5. 132mm*132mm Sq.Pipe/18.71Kg/Rmt:

3.00 Mtr.*2 Nos.= 6.00 Rmt.
Wastage-5% 0.30 Rmt
6.30 Rmt @ 18.71 Kg/Rmt.=117.87 Kgs.

6. Forging design:

1. Center Bottom design: 38 Nos * 1.0 Kg each = 38.00 Kgs.
2. Big design: 19 Nos * 1.0 Kg each = 19.00 Kgs.
3. Big design: 20 Nos * 0.5 Kg each = 10.00 Kgs.
4. Small Arch design: 38 Nos * 0.25 Kg each = 9.50 Kgs.

657.04 Kgs

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ANALYSIS OF RATE FOR GRILL AT B.B.M.P PARKS.

Area Considered: 6.23Mtr.*2.10Mtr.=13.08Sqmt.

1	Cost of Sq.Rod,Flat and Angle: 294.92+124.80+4.47+38.4	462.68 Kgs. @ 90.00 Per Kg.=	41641.20
2	Cost of Sq.Pipe:	117.87 Kgs. @ 90.00 Per Kg.=	10608.30
3	Forgings Design Cost: 1. Center Bottom design: 2. Big design: 3. Big design: 4. Small Arch design:	38 Nos. @ 340.00 each = 19 Nos. @ 200.00 each = 20 Nos. @ 110.00 each = 38 Nos. @ 110.00 each =	12920.00 4200.00 1980.00 4620.00
4	Galvanizing of Flat,Sq,Rod,Pipe and angle.	657.04 Kgs. @ 50.00 Per Kg.=	32852.00
5	Labour charges for fabrication of grill including cutting, straightening, placing in position and welding wherever necessery with gringing, chipping etc.,	657.04 Kgs. @ 54.00 Per Kg.= (60% of Material Cost)	35450.16
6	Transposition charges: a) Raw materials from Market to Work shop	657.04 Kgs. @ 1.00 Per Kg.=	657.04
	b) Finished Grill from Workshop to Work site	657.04 Kgs. @ 2.00 Per Kg.=	1314.08
7	Erection and fixing in position whole grill using crane hoist, stand supports etc.:	657.04 Kgs. @ 30.00 Per Kg.=	19711.20
8	Synthetic enamel painting two coats of approve make and colour over a base cost of red-oxide primer.: (P-47 & 48. I.No.8.34.3 7 8.40-SR 2021-22) (37.00+90.00)	1 * 13.08 Sqmt @ Rs. 127.00 per Sqmt.=	1661.16
			167645.14
		10% Tax &Over Head charges =	16764.51
		10% Contractor Profit =	18440.97
		1% Contractor Profit =	1676.45
			204527.07

$$\text{Unit Rate} = \frac{204527.07}{13.08 \text{ Sqmt}} = 15636.63 \text{ / Sqmt}$$

Say : 15630.00 / Sqmt

(Rupees Fifteen Thousand Six hundred thirty only per Square meter)

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CACLULATION OF MATERIALS FOR GATE AT B.B.M.P PARKS

Fabricating, providing and erecting in position Hot dip galvanised Gate. Using 72*72*4.8mm Sq. GI Pipe frame with top pipe bending in heavy duty hydraolic press with sand packing and hot bending to form double arch as per drawing profile, 20mm hot dip galvanised sq rod for verticals at 150mm c/c, as shown in the drawing including providing hot dip galvanised forged ornamental design in between sq rods and heads at top,middle and bottom. Intermediate supports of 75*12mm and 50*6mm arch bent to hot dip galvanised flats the work is inclusive of throughing GI flat GI sq rods,placing,welding all the joints including grinding,finishing metal patty,painting wo coats enamel painting.The rate is inclusive of all materials like GI sq.pipe,GI Sq rods,GI forged designs etc , heavy duty hinges are made out of 75mm solid sq block assembled with 20mm dia bearing in the three places for each flop. Heavy duty locking arrangements at low places including cost of labou,pailnting,erecting charges using hoist pulley cranes with all lead and lift,loading,transportation,unloading,scaffolding charges and all other incidental charges for sucessful completion of the work as per directions of the Engineer-in-charge of the work.

Area Considere: $2.5\text{Mtr.} * \frac{3.0+3.61}{2} = 8.265$ Sqmt

1 72*72mm*4.8mm Sq.Pipe:

3.61 Mtr.*	1 Nos.=	3.61 Rmt.
3.00 Mtr.*	1 Nos.=	3.00 Rmt.
2.56 Mtr.*	1 Nos.=	2.56 Rmt.
2.50 Mtr.*	1 Nos.=	2.50 Rmt.
		11.67 Rmt.
Wastage 5% =		0.58 Rmt.
		12.25 Rmt. @ 9.66 Kg/Rmt = 118.37 Kgs

2 38*38mm*4.0mm Sq.Pipe:

3.50 Mtr.*	1 Nos.=	3.50 Rmt.
2.85 Mtr.*	1 Nos.=	2.85 Rmt.
		6.35 Rmt.
Wastage 5% =		0.32 Rmt.
		6.67 Rmt. @ 3.95 Kg/Rmt = 26.34 Kgs

3 72*72mm*3.8mm Sq.Pipe:

2.85 Mtr.*	2 Nos.=	5.70 Rmt.
2.87 Mtr.*	1 Nos.=	2.87 Rmt.
2.89 Mtr.*	1 Nos.=	2.89 Rmt.
2.92 Mtr.*	1 Nos.=	2.92 Rmt.
2.97 Mtr.*	1 Nos.=	2.97 Rmt.
3.05 Mtr.*	1 Nos.=	3.05 Rmt.
3.10 Mtr.*	1 Nos.=	3.10 Rmt.
3.18 Mtr.*	1 Nos.=	3.18 Rmt.
3.26 Mtr.*	1 Nos.=	3.26 Rmt.
3.35 Mtr.*	1 Nos.=	3.35 Rmt.
3.41 Mtr.*	1 Nos.=	3.41 Rmt.
0.50 Mtr.*	13 Nos.=	6.50 Rmt.
0.25 Mtr.*	13 Nos.=	3.25 Rmt.
0.17 Mtr.*	8 Nos.=	1.36 Rmt.
0.05 Mtr.*	8 Nos.=	0.40 Rmt.
0.36 Mtr.*	16 Nos.=	5.76 Rmt.
		53.97 Rmt.
Wastage 5% =		2.70 Rmt.
		56.67 Rmt. @ 3.14 Kg/Rmt = 177.94 Kgs

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4. 75*12mm Flat/77.10Kg/Rmt:

2.30 Mtr.* 2 Nos.= 4.60 Rmt.
4.60 Rmt.
Wastage 5% = 0.23 Rmt.
4.83 Rmt. @ 7.10 Kg/Rmt = 34.29 Kgs

5. 50mm*6mm Flat:

2.10 Mtr.* 4 Nos.= 8.40 Rmt.
0.90 Mtr.* 2 Nos.= 1.80 Rmt.
0.60 Mtr.* 2 Nos.= 1.20 Rmt.
11.40 Rmt.
Wastage 5% = 0.57 Rmt.
11.97 Rmt. @ 3.15 Kg/Rmt = 37.71 Kgs

6. 12mm*6mm Flat:

.19* 2 * 8 = 3.04 Rmt.
Wastage 5% = 0.15 Rmt.
3.19 Rmt. @ 0.56 Kg/Rmt = 1.79 Kgs

7. Forging designs, Hinges & Locking, Anchoring Base Plate & Gusset Plate:
180.00 Kgs
576.43 Kgs

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ANALYSIS OF RATE FOR GATE AT B.B.M.P PARKS.

Area Considere: 2.5Mtr.*$\frac{3.0+3.61}{2}$ = 8.265 Sqmt

1	Cost of Sq.Rod, Quesset Plate, Anchor Base plate:		
		296.73 Kgs. @ 90.00 Per Kg.=	26705.70
2	Cost of Sq.Pipe:		
		144.71 Kgs. @ 90.00 Per Kg.=	13023.90
3	Forgings Design Cost:		
	1 Center design:	33 Nos @340.00 each =	11220.00
	2 Top big design:	8 Nos @200.00 each =	1600.00
	3 Top smal design:	47 Nos. @110.00 each =	5170.00
	4 Top Small Arch Design:	16 Nos. @110.00 each =	1760.00
4	Ornamental turned pipe for gap filling:		
		1 Nos @ 2000.00 each =	2000.00
5	Galvanizing of Flat,Sq.Rod,Pipe and angle		
		576.44 Kgs. @ 50.00Per Kg.=	28822.00
6	Labour charges for fabrication of grill including cutting, straightening, placing in position and welding wherever necessery with gringing, chipping etc.,		
		576.44 Kgs. @ 54.00Per Kg.= (60% of Material Cost)	31127.76
7	Labour charges for fixing including crane hoist, stand supports, scaffolding etc.;		
		576.44 Kgs. @ 20.00Per Kg.=	11528.80
8	Transposition charges:		
	a) Raw materials from Market to Work shop		
		576.44 Kgs. @ 1.00Per Kg.=	576.44
	b) Finished Grill from Workshop to Work site		
		657.04 Kgs. @ 2.00Per Kg.=	1152.88
9	Heavy Duty Lathe Turned Hinges & Hardened Shafts:		
		3 Sets @ 2000 Per Set =	6000.00
10	Heavy Duty Locking Arrangement (Center & Bottom):		
		2 Sets @ 1500 Each =	3000.00
11	Synthetic enamel painting two coats of approve make and colour over a base cost of red-oxide primer.: (P-47 & 48. I.No.8.34.3 7 8.40-SR 2021-22) (37.00+90.00)		
		1 * 8.265 Sqmt @ Rs. 127.00 per Sqmt.=	1049.66
			144737.14
		10% Tax &Over Head charges =	14473.71
		10% Contractor Profit =	15921.08
		1% Contractor Profit =	1447.37
			176579.30

$$\text{Unit Rate} = \frac{176579.30}{8.265 \text{ Sqmt}} = 21364.71 \text{ / Sqmt}$$

Say : 21350.00 / Sqmt

(Rupees Twenty One Thousand Three hundred Fifty only per Square meter)

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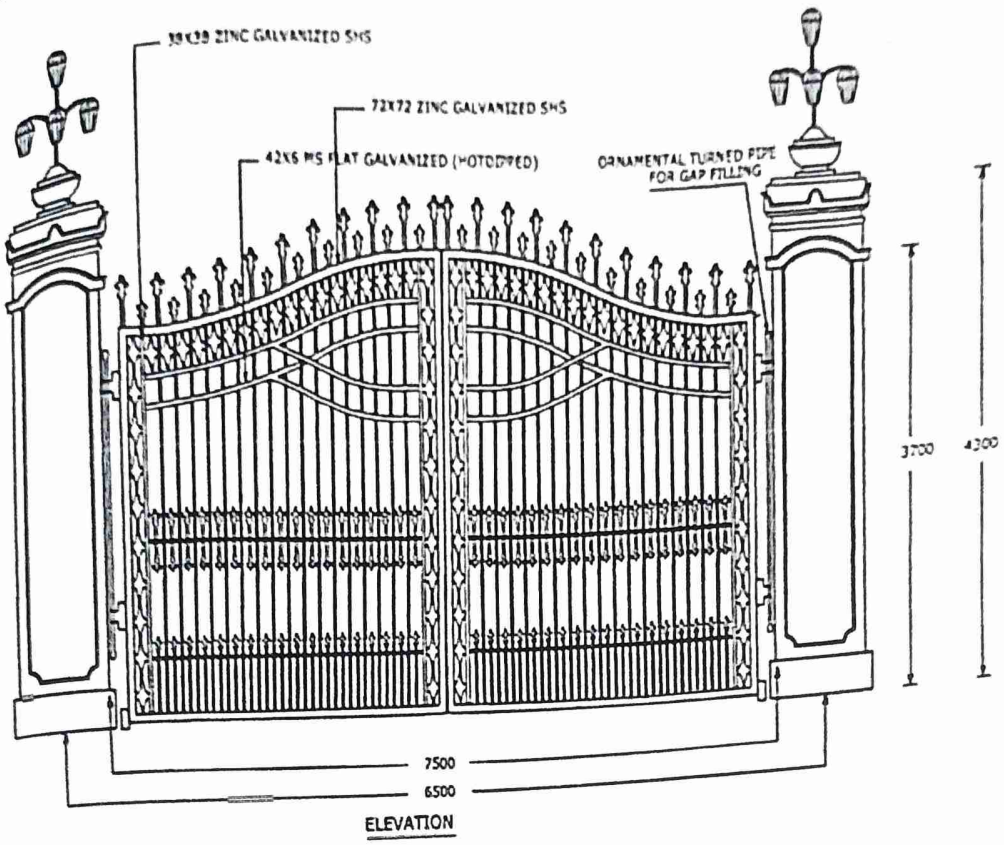

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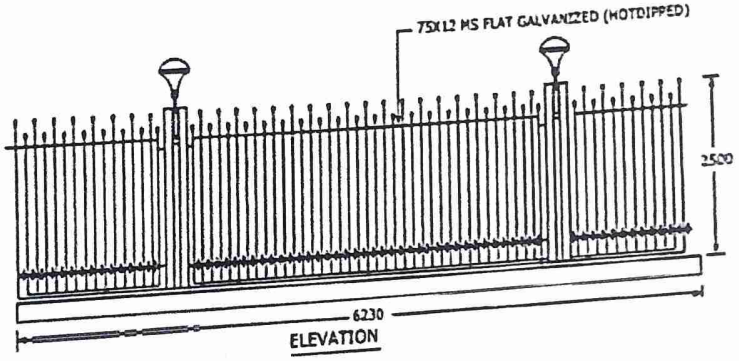

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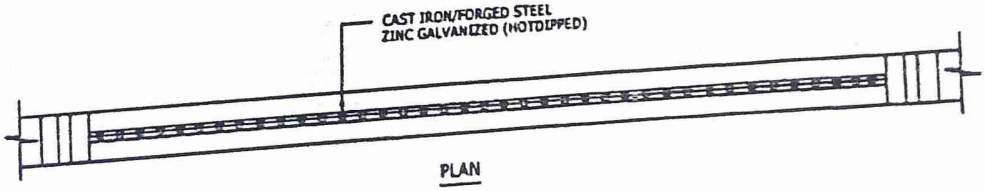

PLAN

M.S SAFETY GATE AND GRILL

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Yelahanka Zone
BBMP, Bangalore - 92

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Project Division
Yelahanka Zone
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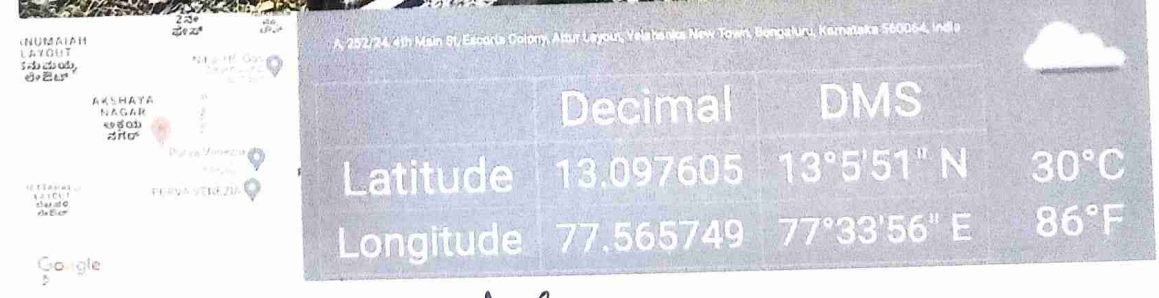
PHOTOS

Name of Work: Development of Park at Sandeep Unnikrishnan road from Purvankara Apartment to GKVK road in Attur ward no. 04


A 252/24, 4th Main St, Escorts Colony, Attur Layout, Yelahanka New Town, Bengaluru, Karnataka 560064, India
Decimal DMS
Latitude 13.097605 13°5'51" N 30°C
Longitude 77.565749 77°33'56" E 86°F
Google

Name of Work: Development of Park at Sandeep Unnikrishnan road from Purvankara Apartment to GKVK road in Attur ward no. 04

	Decimal	DMS	
Latitude	13.097574	13°5'51" N	30°C
Longitude	77.564923	77°33'53" E	86°F

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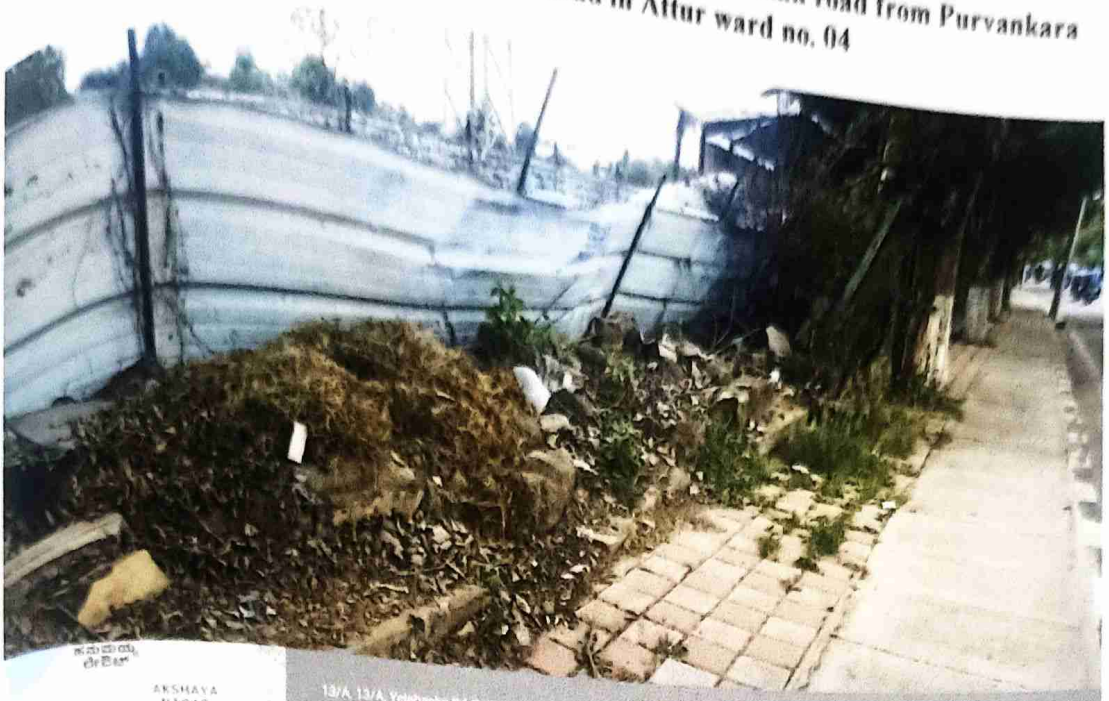
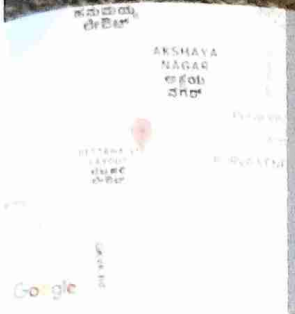
Name of Work: Development of Park at Sandeep Unnikrishnan road from Purvankara Apartment to GKVK road in Attur ward no. 04





13/A, 13/A, Yelahanka Rd, Bettahalli Layout, Adityanagar, Vidyaranyapura, Bengaluru, Karnataka 560064, India

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57, Yelahanka Main Rd, Adityanagar, Vidyaranyapura, Bengaluru, Karnataka 560064, India

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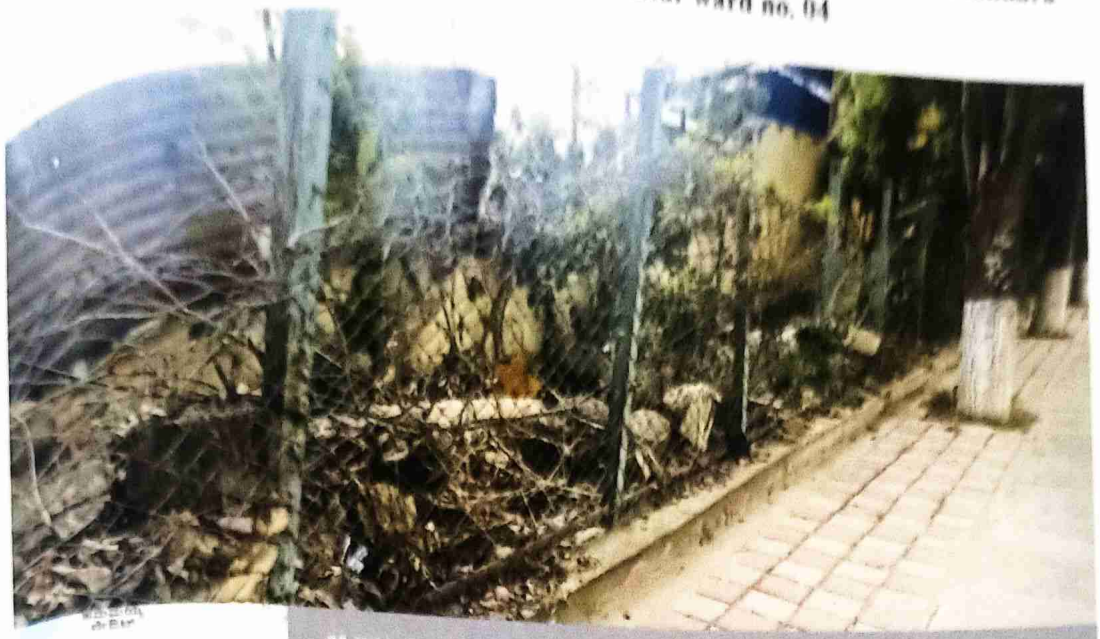
Name of Work: Development of Park at Sandeep Unnikrishnan road from Parvankara Apartment to GKVK road in Attur ward no. 04



23, Yelahanka Main Rd, Vidyaranyapura, Bengaluru, Karnataka 560064, India

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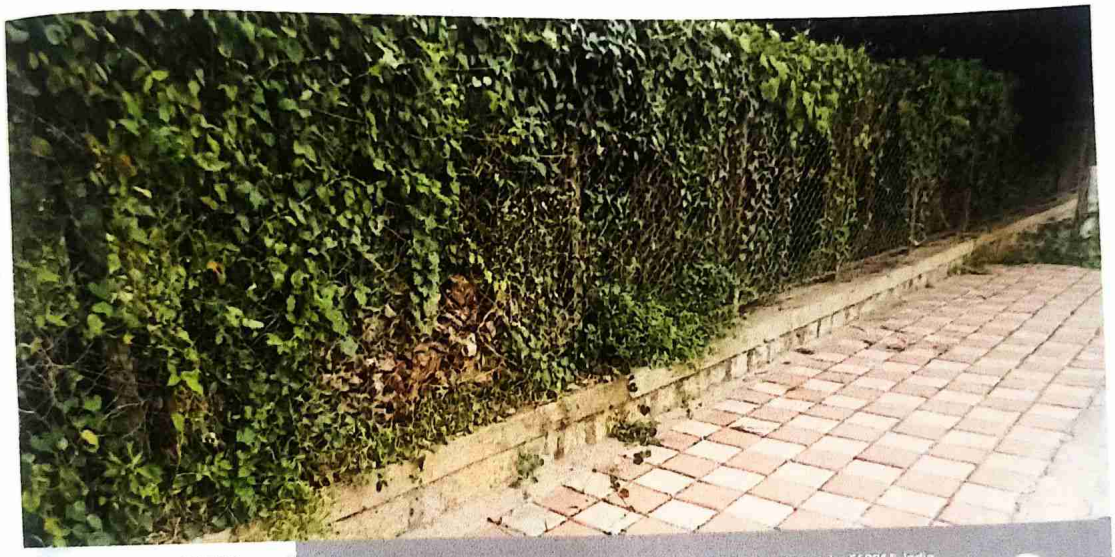

3HV6+RJ7, near gk vk gate, Doddabettahalli, Vignana Kendra, Bengaluru, Karnataka 560065, India

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Longitude	77.561422	77°33'41" E	84°F

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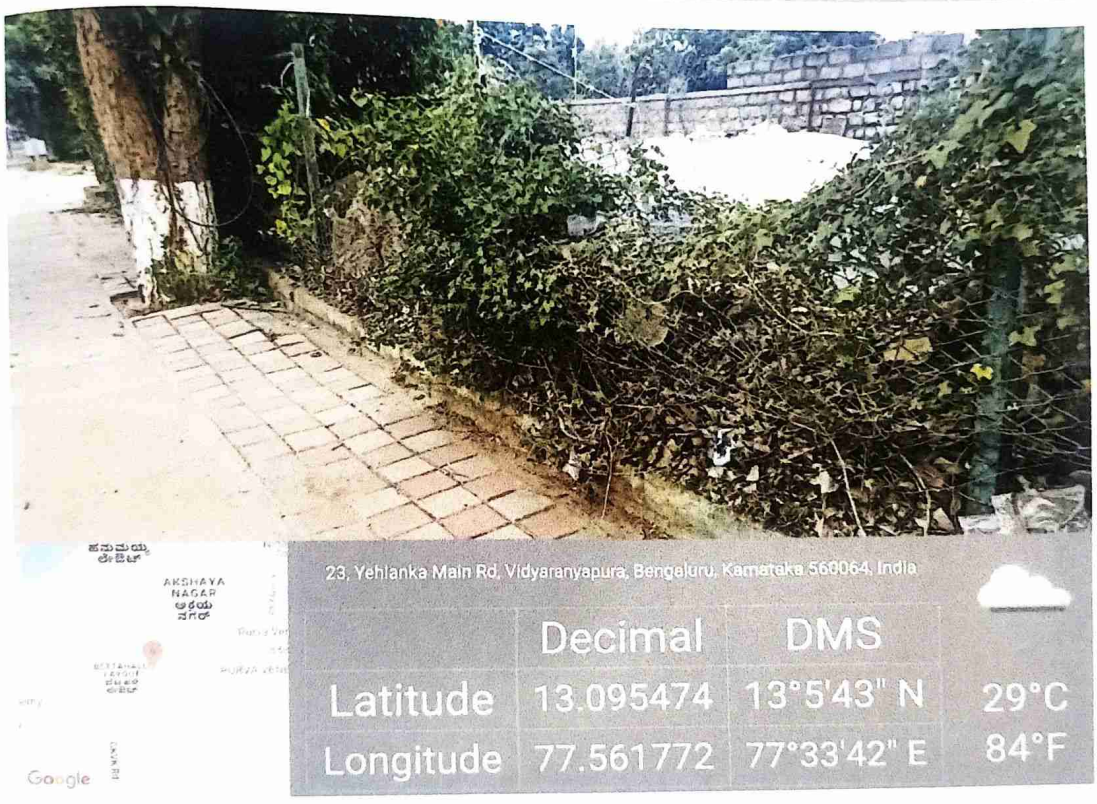
Name of Work: Development of Park at Sandeep Unnikrishnan road from Purvankara Apartment to GKVK road in Attur ward no. 04



Name of Work: Development of Park at Sandeep Unnikrishnan road from Parvambara Apartment to GKVK road in Attur ward no. 54

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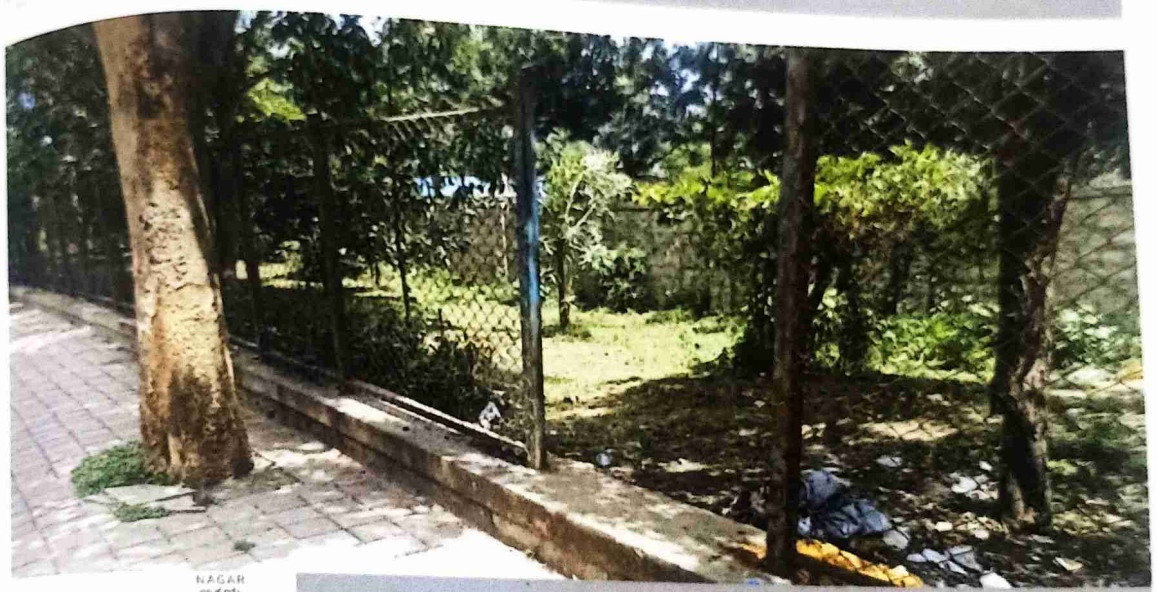

42, Yelahanka Rd, Adityanagar, Vidyaranyapura, Bengaluru, Karnataka 560097, India

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Longitude	77.560535	77°33'37" E	84°F

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